PROJECT No - 03

SMART DUSTBIN SYSTEM USING ULTRASONIC SENSOR & SERVO MOTOR

SMART DUSTBIN SYSTEM

Aim: Design a Smart Dustbin System

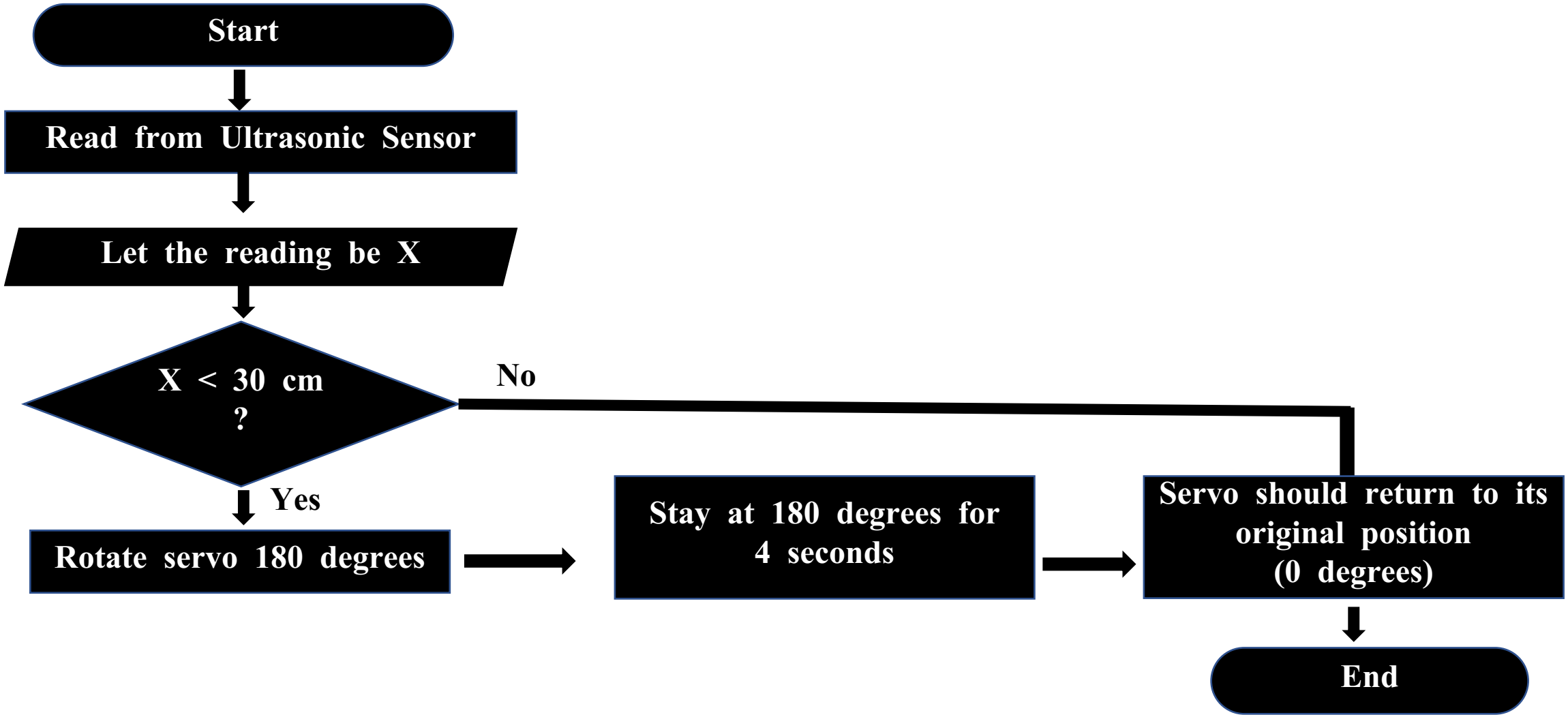
Objectives:

- **If Ultrasonic Sensor detects any object within 30cm the servo motor should turn 180 degrees.**
- **The servo motor should stay at 180 degrees to insert the dust into the dustbin.**
- **Finally, the servo motor should return to its original position (0 degrees) to close the lid.**

Steps:

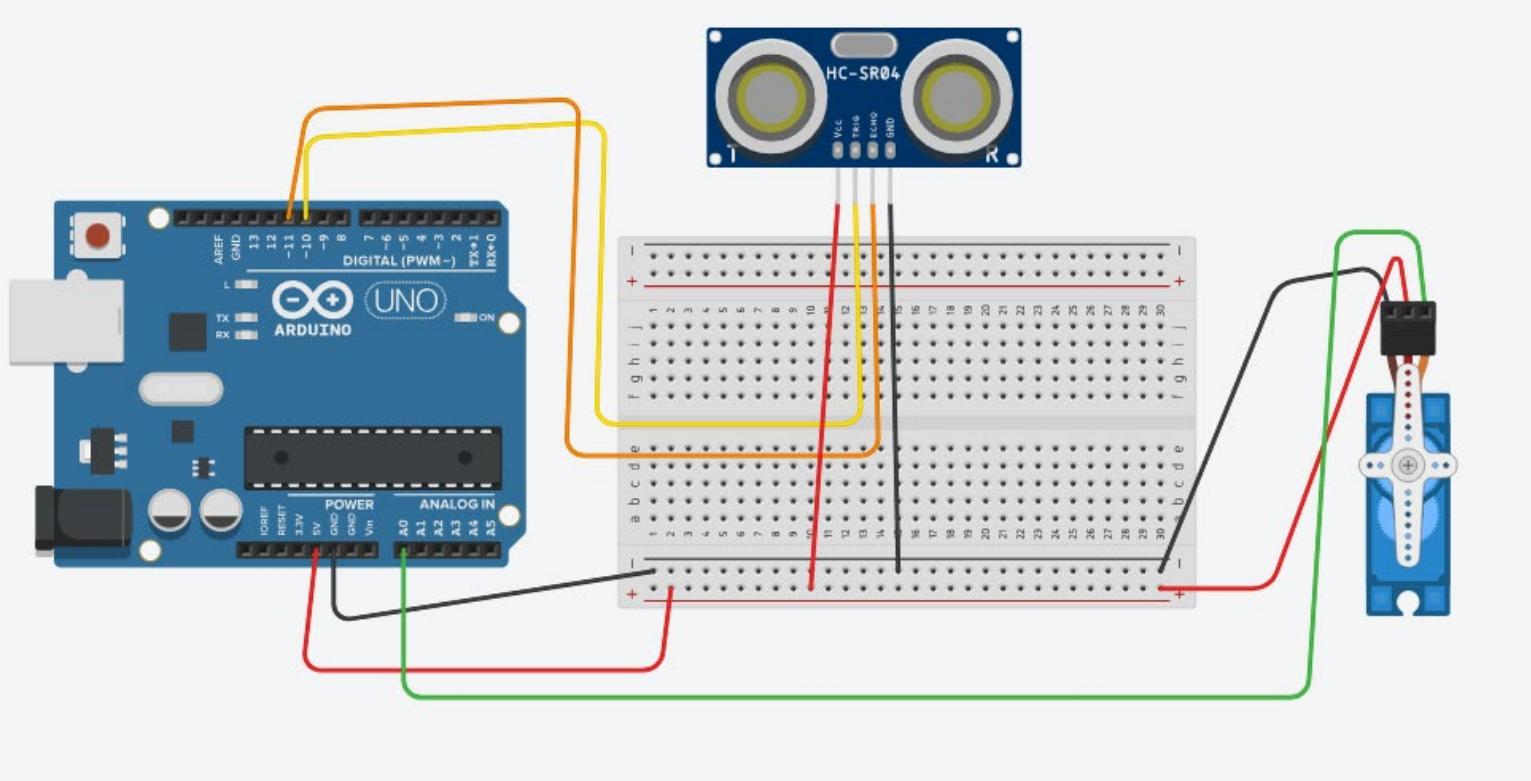
1. **Create a Flowchart**
2. **Design the circuit in TinkerCAD**
3. **Develop the scratch program using the Flowchart created.**
4. **Obtain the C++ code from the scratch program.**
5. **Connect the actual circuit with Arduino and other electronics components from the circuit design.**
6. **Upload the code to the Arduino.**

SMART DUSTBIN SYSTEM – FLOW CHART



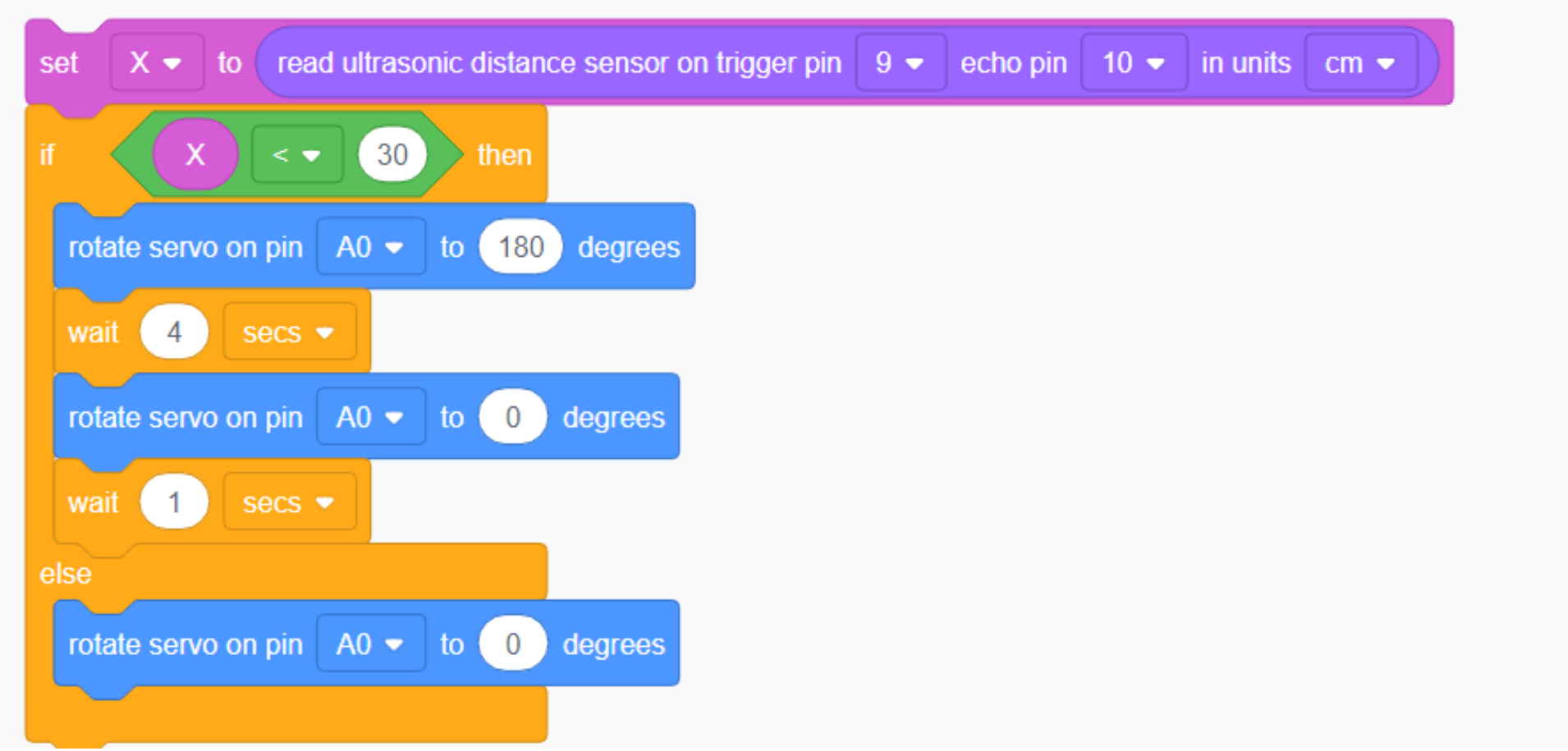
SMART DUSTBIN SYSTEM – CIRCUIT DESIGN

Arduino with Servo Motor



- The servo motor should rotate 180 degrees
- Stay at 180 degrees for 4 seconds
- The servo motor should rotate to 0 degrees

SMART DUSTBIN SYSTEM – SCRATCH PROGRAM


set X to read ultrasonic distance sensor on trigger pin 9 echo pin 10 in units cm
if X < 30 then
rotate servo on pin A0 to 180 degrees
wait 4 secs
rotate servo on pin A0 to 0 degrees
wait 1 secs
else
rotate servo on pin A0 to 0 degrees